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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,844	06/13/2005	Brent Walworth	4702-18	7502
23117 7590 12/31/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
SASAKI, SHOGO				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
12/31/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/538,844

**Applicant(s)**

WALWORTH, BRENT

**Examiner**

Shogo Sasaki

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6/13/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☒ Claim(s) 13, 15-18 and 20-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date 3/13/2005, 11/14/2005
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Preliminary amendment filed on 6/13/2005 is acknowledged. Claims 1-12 are cancelled. New claims 13-24 are pending in this application, and are treated on the merit for this office action.

#### ***Drawings***

2. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

#### ***Claim Objections***

3. Claim 13, 15, 16, 17, 18, 20 and 21 are objected to because of the following informalities: The recitations "particulate matter" in lines 3, 5, 6 and 7 in claim 13; in line 2 of claim 15; in claim 16; in claim 17; in lines 2 and 3 of claim 18; in line 1 of claim 20; and in claim 21 render said claims unclear, because it is not clear if it is the same particulate matter recited in the preamble of claim 13 or some other particulate matter. It is suggested to add "said" before each particulate matter recited.

4. Claim 13, 15, 16, 18, 21 and 22 are objected to because of the following informalities: The recitations "diluent" in lines 3, 5 and 7 of claim 13; in line 2 of claim 15; in claim 16; in line 3 of claim 18; in claim 21; and in claim 22 render said claims unclear, because it is not clear if it is the same diluent recited in line 2 of claim 13 or some other diluent. It is suggested to add "said" before each diluent recited. It is also suggested to replace "any diluent" in line 3 of claim 15 with "any of said diluent."

5. Regarding claims 23 and 24, the recitations of "a polymerization reactor" and "a continuous polymerization reactor" render said claims unclear. Applicant is advised to define the relationships between the reactor in claim 13, which said claim depend from, with these limitations; or properly limit said claims to mean the reactor in claim 13 is the polymerization reactor or the continuous polymerization reactor.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 14, 20, 22, 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 14, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 14 recites the broad recitation catalyst, and the claim also recites preferably a polymerization catalyst which is the narrower statement of the range/limitation. Appropriate correction is required.

Claim 20 recites the limitation "the vessel" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to replace "the vessel" with "a vessel", or to define a vessel earlier in the claim.

Claim 22 recites the limitation "the slurry tank" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to replace "the slurry tank" with "a slurry tank", or to define a slurry tank earlier in the claim.

Claims 23 and 24 recite the limitation "the mass flow of catalyst" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to replace "the mass flow of catalyst" with "a mass flow of catalyst", or to define a mass flow of catalyst earlier in the claim.

Regarding claim 24, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 24 recites the broad recitation less than 10 %, and the claim also recites preferably less than 10% which is the narrower statement of the range/limitation. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. **Claims 13-23** rejected under 35 U.S.C. 102(b) as being anticipated by  
CELANESE Corp (GB 896,786, IDS).

Regarding claims 13-23, CELANESE Corp discloses a process for providing a flow of particulate matter to a reactor comprising:

- intermittently adding said particulate matter and a diluent to a mixing tank (page 1, line 16-25, a zone = Fig. 1, 22; and page 1, line 85-page 2, line 1, surge tank = Fig. 1, 22);
- continuously withdrawing a slurry of particulate matter in diluent from the mixing tank for introduction into the reactor (page 1, lines 54-60, the reactor = Fig. 1, 26);
- wherein prior to each addition of particulate matter and diluent to the mixing tank, the concentration of particulate matter in the diluent already in the mixing tank is measured or calculated: the volume of slurry in the zone/tank is monitored by the level control 30 in Fig. 1: see page 3, lines 27-29. The catalyst feeder/hopper is equipped with a metering device: page 1, lines 75-84; and page 3, lines 101-105. The concentration of the catalyst in the zone/tank is easily measured or calculated. This is the same method as disclosed in the instant application; page 3, lines 18-20 and lines 26-29; and page 8, line 2- page 9, line 9; and the amount of particulate matter and diluent subsequently added is measured so as to achieve the same concentration at the end of the addition as that measured or calculated prior to the addition (page 1, lines 25-43; and page 1, line 85-90);
- wherein the particulate matter is a catalyst, preferably a polymerization catalyst (page 1, lines 11-15);
- wherein measurement of the amount of particulate matter and diluent added to the mixing tank is carried out before any diluent is added to the particulate matter; the catalyst and the diluent are added separately (page 1, lines 16-25; and Fig. 1). Thus the desired concentration of the catalyst must have been known in advance;
- wherein diluent and particulate matter are added to the mixing tank separately (Page 1, lines 16-25, a powdered catalyst added to a zone (Fig. 1, 22) up stream of a reactor (Fig. 1, 26), and then a liquid is added to the zone (via 28 in Fig. 1: See Page 3, lines 21-25));

- wherein some or all of the diluent is used to flush the measured amount of particulate matter into the mixing tank (page 1, lines 16-25, a powdered catalyst added to a zone (Fig. 1, 22) upstream of a reactor (Fig. 1, 26), and then a liquid is added to the zone (Fig. 1, 28; and page 3, lines 21-25); the powdered catalyst in the inlet must have been flushed in to the zone with the liquid (see a specific example: page 3, lines 113-116);
- wherein the concentration of particulate matter in the diluent is calculated using measurements of the volume or mass of diluent in the mixing tank, and the mass of particulate matter added to the mixing tank: the volume of slurry in the zone/tank is monitored by the level control 30 in Fig. 1, see page 3, lines 27-29). The catalyst feeder/hopper is equipped with a metering device: page 1, lines 75-84; and page 3, lines 101-105. The concentration of the catalyst in the zone/tank is easily measured or calculated. This is the same method as disclosed in the instant application (page 3, lines 18-20 and lines 26-29; and page 8, line 2- page 9, line 9);
- wherein the particulate matter is first measured into a feed pot (Fig. 1, 17, a conveyer), which is subsequently emptied into the mixing tank (page 2, lines 114-125);
- wherein the amount of particulate matter measured into the feed pot is determined by weighing the vessel from which the particulate matter is discharged: the vessel appears to be no different than the tank; also see 112 rejection above. The capacity of catalyst/diluent slurry is maintained in a predetermined limit or constant (page 1, lines 25-43; page 1, line 85-90; and page 3, lines 21-29). If the volume of the slurry is known, then effectively the weight of the slurry in the vessel is known;
- means for measuring the mass flow of particulate matter and diluent out of the mixing tank to the reactor: the catalyst feeder/hopper is equipped with a metering device, (page 1, lines 75-84; and page 3, lines 101-105). The diluent supply is monitored, (page 3, lines 108-110). The input of the catalyst and the diluent are

metered, and the capacity of catalyst/diluent slurry is maintained in a predetermined limit or constant, (page 1, lines 25-43; and page 1, line 85-90), thus effectively, the invention of CELANESE Corp is metering the out put of the slurry;

- where catalyst and/or diluent addition to the slurry tank is continuous (page 1, lines 16-25); and
- for controlling the mass flow of catalyst to a polymerization reactor (page 1, lines 16-25).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. **Claim 24** is rejected under 35 U.S.C. 103(a) as being unpatentable over CELANESE Corp (GB 896,786, IDS).

Regarding claim 24, CELANESE Corp discloses all of the limitations as set forth above.

CELANESE Corp does not explicitly disclose wherein the mass flow of catalyst to a continuous polymerization reactor varies by less than 10%, preferably less than 5%,



during filing of the mixing tank. However, CELANESE Corp teaches that the rate of feed of the catalyst is determined by the needs of the reactor and the variation in the rate of feed of the solvent thus determines the concentration of the solid catalyst slurried in the solvent during passage to the reactor (page 2, lines 8-14).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to set the variation between 5-10%, since where the general conditions of the claims are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shogo Sasaki whose telephone number is (571) 270-7071. The examiner can normally be reached on Mon-Thur, 10:00am-6:30pm, EST.  
14.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS

/Yelena G. Gakh/  
Primary Examiner, Art Unit 1797

12/26/08